

1. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$20x^2 - 21x - 54 = 0$$

- A. $x_1 \in [-3.85, -3.18]$ and $x_2 \in [0.67, 0.88]$
- B. $x_1 \in [-0.8, 0.96]$ and $x_2 \in [4.45, 4.58]$
- C. $x_1 \in [-1.92, -0.67]$ and $x_2 \in [2.06, 2.64]$
- D. $x_1 \in [-6.22, -5.51]$ and $x_2 \in [-0.51, 0.47]$
- E. $x_1 \in [-24.34, -23.91]$ and $x_2 \in [44.99, 45.65]$

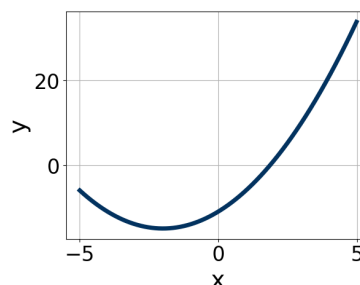
2. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d)$; $b \leq d$.

$$24x^2 + 38x + 15$$

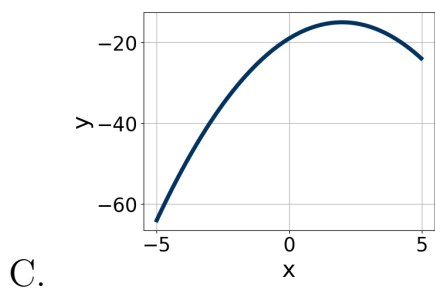
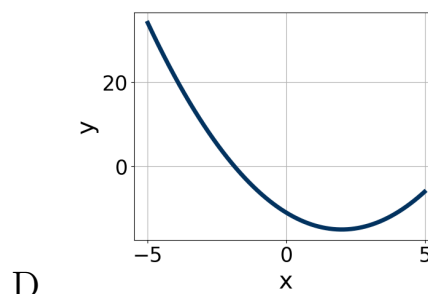
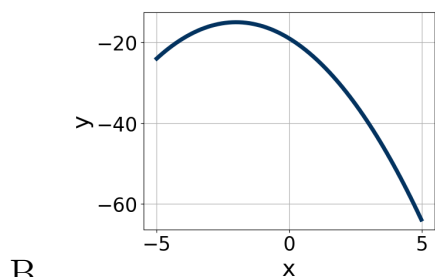
- A. $a \in [1.28, 2.59]$, $b \in [3, 10]$, $c \in [10.63, 14.02]$, and $d \in [5, 8]$
- B. $a \in [0.84, 1.07]$, $b \in [13, 23]$, $c \in [-0.46, 1.61]$, and $d \in [14, 26]$
- C. $a \in [3.23, 4.62]$, $b \in [3, 10]$, $c \in [5.33, 6.32]$, and $d \in [5, 8]$
- D. $a \in [11.82, 12.46]$, $b \in [3, 10]$, $c \in [1.49, 2.68]$, and $d \in [5, 8]$
- E. None of the above.

3. Graph the equation below.

$$f(x) = -(x - 2)^2 - 15$$



A.



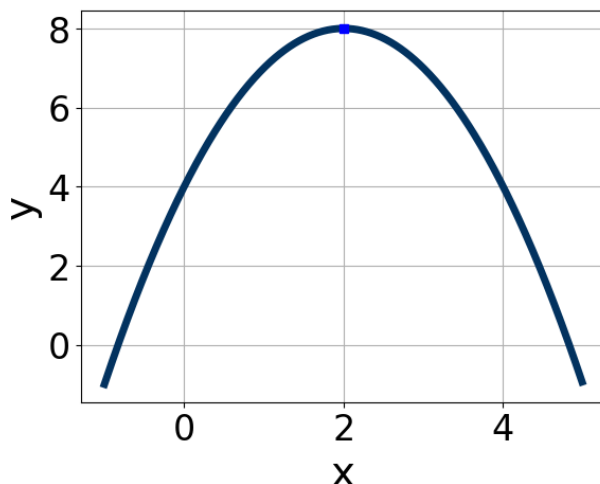
E. None of the above.

4. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d)$; $b \leq d$.

$$24x^2 - 50x + 25$$

- A. $a \in [2.6, 4.2]$, $b \in [-6, 2]$, $c \in [6.24, 8.28]$, and $d \in [-6, 2]$
- B. $a \in [9.8, 12.2]$, $b \in [-6, 2]$, $c \in [1.28, 2.4]$, and $d \in [-6, 2]$
- C. $a \in [3.4, 6.1]$, $b \in [-6, 2]$, $c \in [3.69, 5.33]$, and $d \in [-6, 2]$
- D. $a \in [-1.5, 2.5]$, $b \in [-35, -22]$, $c \in [0.81, 1.48]$, and $d \in [-25, -12]$
- E. None of the above.

5. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b , and c belong to.



- A. $a \in [-4, 0]$, $b \in [-6, -1]$, and $c \in [-14, -7]$
- B. $a \in [1, 5]$, $b \in [-6, -1]$, and $c \in [12, 17]$
- C. $a \in [1, 5]$, $b \in [4, 7]$, and $c \in [12, 17]$
- D. $a \in [-4, 0]$, $b \in [4, 7]$, and $c \in [2, 6]$
- E. $a \in [-4, 0]$, $b \in [-6, -1]$, and $c \in [2, 6]$

6. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$20x^2 - 12x - 5 = 0$$

- A. $x_1 \in [-0.94, -0.61]$ and $x_2 \in [-0.1, 0.7]$
- B. $x_1 \in [-6.24, -5.08]$ and $x_2 \in [16.6, 19.4]$
- C. $x_1 \in [-0.68, 0.72]$ and $x_2 \in [0.3, 1.4]$
- D. $x_1 \in [-23.25, -22.33]$ and $x_2 \in [22.7, 24.8]$
- E. There are no Real solutions.

7. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$16x^2 + 10x - 7 = 0$$

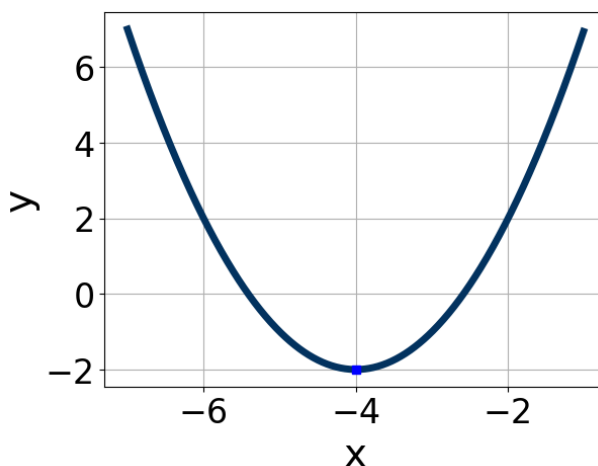
- A. $x_1 \in [-1.9, -0.86]$ and $x_2 \in [-0.33, 0.66]$
- B. $x_1 \in [-0.86, 0.5]$ and $x_2 \in [0.78, 1.2]$
- C. $x_1 \in [-17.2, -15.65]$ and $x_2 \in [6.61, 6.82]$
- D. $x_1 \in [-24.09, -23.27]$ and $x_2 \in [23, 23.38]$
- E. There are no Real solutions.

8. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$10x^2 - 57x + 54 = 0$$

- A. $x_1 \in [1, 1.28]$ and $x_2 \in [4.16, 4.76]$
- B. $x_1 \in [11.78, 12.58]$ and $x_2 \in [43.2, 46.27]$
- C. $x_1 \in [0.69, 0.93]$ and $x_2 \in [4.66, 6.35]$
- D. $x_1 \in [1.44, 1.56]$ and $x_2 \in [2.77, 3.98]$
- E. $x_1 \in [0.45, 0.71]$ and $x_2 \in [7.78, 10.35]$

9. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a , b , and c belong to.

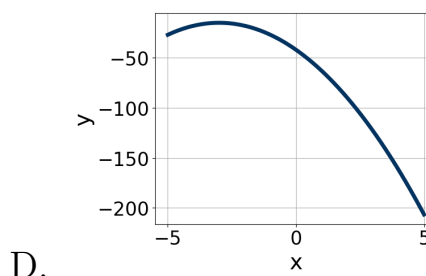
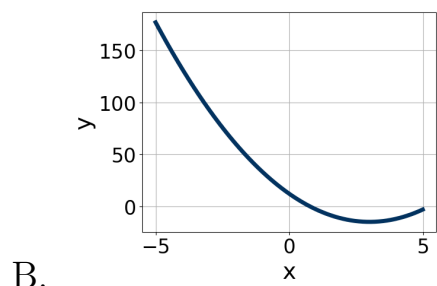
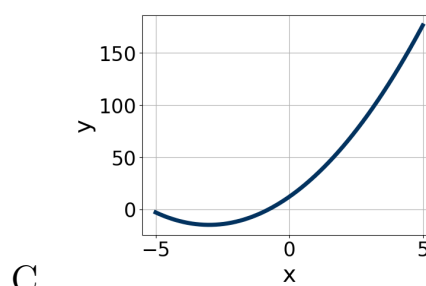
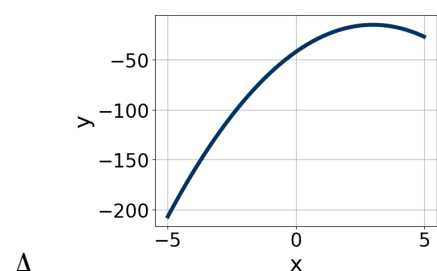


- A. $a \in [0.3, 1.4]$, $b \in [-8, -4]$, and $c \in [13, 17]$

- B. $a \in [0.3, 1.4]$, $b \in [-8, -4]$, and $c \in [17, 19]$
 C. $a \in [-1.7, -0.4]$, $b \in [-8, -4]$, and $c \in [-20, -15]$
 D. $a \in [-1.7, -0.4]$, $b \in [6, 10]$, and $c \in [-20, -15]$
 E. $a \in [0.3, 1.4]$, $b \in [6, 10]$, and $c \in [13, 17]$

10. Graph the equation below.

$$f(x) = -(x + 3)^2 - 15$$



E. None of the above.